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REMARKS/ARGUMENTS

Claims 1-32 are in this application. Claims 18-32 are subject to restriction and/or election requirement. Reexamination of this application is requested in view of the following remarks.

Rejections under 35 U.S.C. §112

Claims 6, 8, 14, 15, and 16 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the difference between the thickness of the lens and the radius of curvature of the lens is not clear and beam waist of the lens is not defined.

In claims 6, 8, 14, 15, and 16, a lens is defined as having a neck region and a convex region. The thickness of the lens is naturally the thickness of the neck region plus the thickness of the convex region. The "radius of curvature" of a curved or convex surface is a well-defined term. In the claims, the radius of curvature pertains only to the convex region of the lens and is distinct from the thickness of the lens. FIG. 4C of the instant application demonstrates the difference between the thickness (T) of the lens and the radius of curvature (Rc) of the convex region of the lens.

The term "beam waist" is a standard term used to describe the optical performance of a lens. As such, this term is known in the art and its definition does not need to be included in the claims. A light beam traveling down an optical fiber core diverges upon entering a lens formed at the end of the optical fiber core and is refracted into a collimated beam or focused beam upon exiting the lens. For the Examiner's convenience, the "beam waist" of the lens is the location in a Gaussian beam where the wavefront has an infinite radius of curvature and the beam diameter is a minimum. FIG. 4C of the instant application demonstrates beam waist of a lens.

From the foregoing, claims 6, 8, 14, 15, and 16 are definite. Withdrawal of the rejection of claims 6, 8, 14, 15, and 16 under 35 U.S.C. §112, second paragraph, is respectfully requested.

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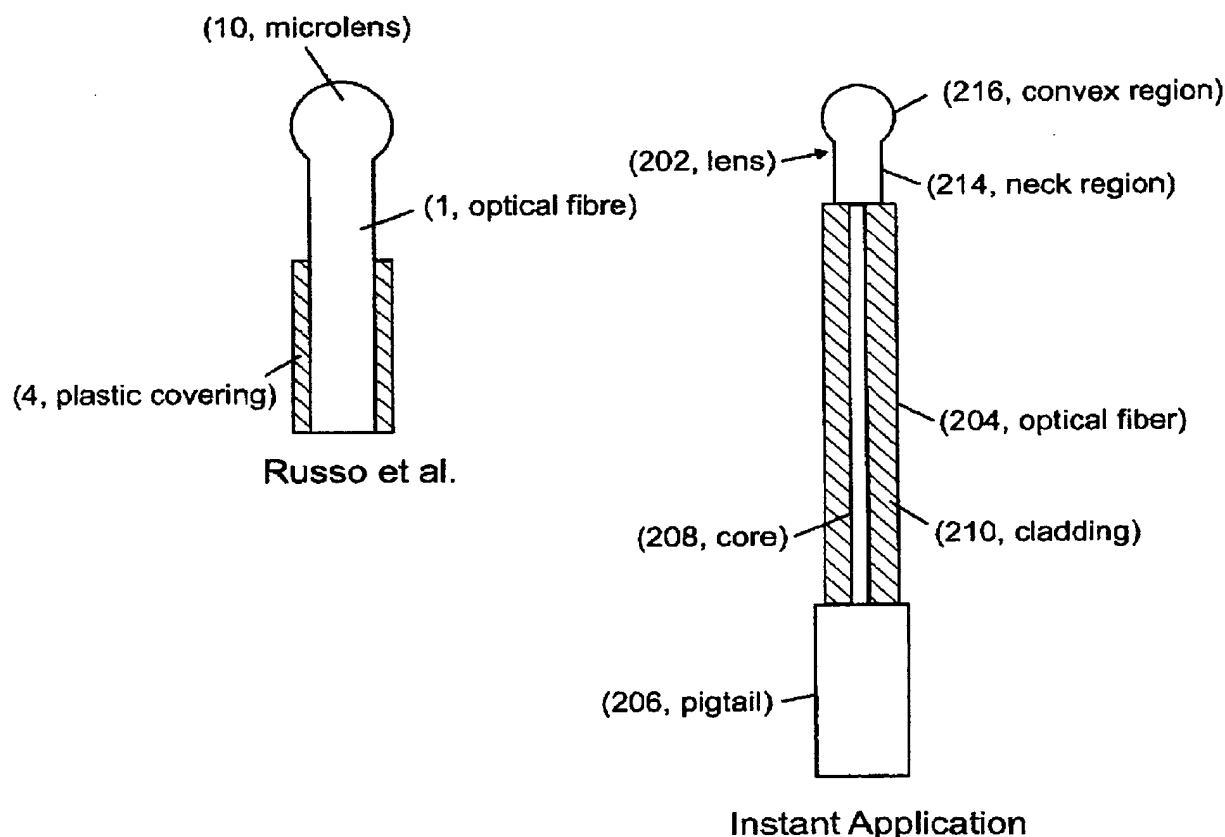
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Rejections under 35 U.S.C. §102

A. Claims 1-5, 7, 9, and 14-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Russo et al. (U.S. Patent No. 4,678,268). This rejection is respectfully traversed.

Claim 1 recites a lensed fiber which comprises an optical fiber and a lens having a neck region and a convex region formed at an end of the optical fiber, the neck region having an overall diameter smaller than an outer diameter of the optical fiber.

Russo et al. disclose a lensed fiber having a lens formed at an end of the optical fiber. However, the lens does not have a neck region or the neck region is indistinguishable from the optical fiber and has the same diameter as the optical fiber. The following is a graphical side-by-side comparison of the lens disclosed in Russo et al. and a representative lens (FIG. 2) from the instant application.



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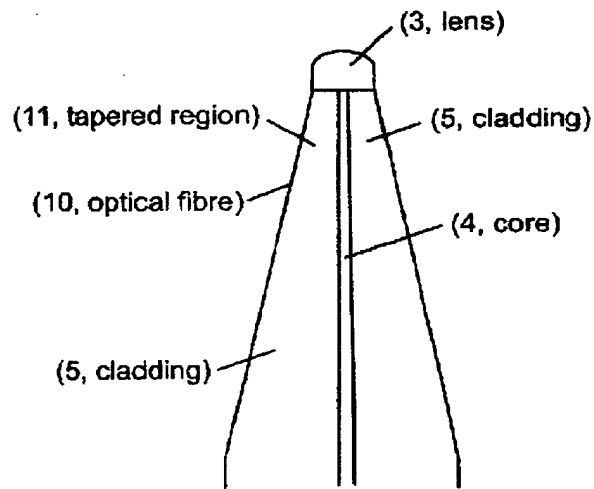
From the foregoing, it is clear that claim 1 is not anticipated by Russo et al. Claims 2-5, 7, 9, and 14-17, which depend from claim 1, are also not anticipated by Russo et al. Withdrawal of the rejection of these claims over Russo et al. is respectfully requested.

B. Claims 1, 2, and 9-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Khoe et al. (U.S. Patent No. 4,721,353). This rejection is respectfully traversed.

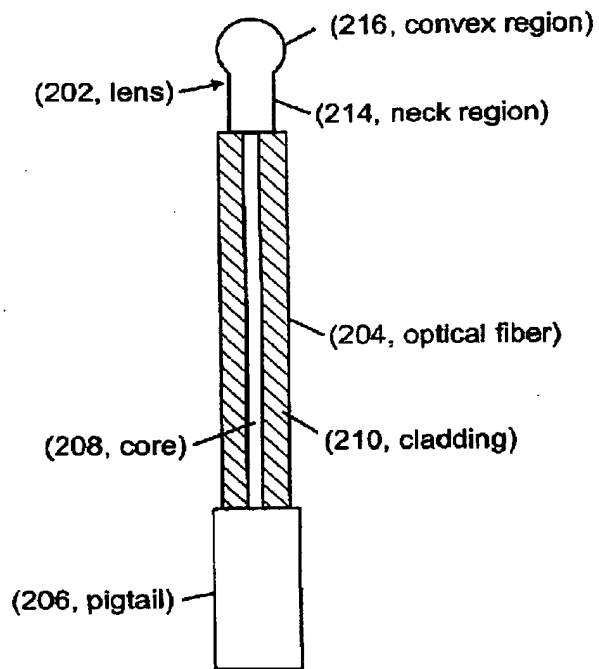
Khoe et al. disclose a planoconvex lens attached to an optical fiber having a tapered region. Khoe et al. do not disclose a lens having both a convex region and a neck region, as recited in claims 1, 2, and 9-17. The Examiner asserts that the tapered region of the optical fiber disclosed in Khoe et al. corresponds to the neck region of the lens recited in claim 1. This assertion is inconsistent with the disclosure of Khoe et al. The tapered region in Khoe et al., being part of the optical fiber, has a wave guiding core. The neck region of the lens of the instant application does not have a wave guiding core. The following is a graphical side-by-side comparison of the lens disclosed in Khoe et al. and a representative lens (FIG. 2) from the instant application.

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Khoe et al.



Instant Application

From the foregoing, it is clear that claim 1 is not anticipated by Khoe et al. Claims 2 and 9-17, which depend from claim 1, are also not anticipated by Khoe et al. Withdrawal of the rejection of these claims over Khoe et al. is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 6, 8, 10, 12, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Russo et al. This rejection is respectfully traversed.

Claims 6, 8, 10, 12, and 13 include the limitation "a lens having a neck region and convex region formed at an end of the optical fiber, the neck region having an overall diameter smaller than an outer diameter of the optical fiber." As discussed above, the lens disclosed in Russo et al. does not have a neck region or the neck region is indistinguishable from the optical fiber and has the same diameter as the optical fiber. The Examiner has not cited any other

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references to overcome this deficiency in Russo et al. Therefore, claims 6, 8, 10, 12, and 13 are patentable. Withdrawal of the rejection of claims 6, 8, 10, 12, and 13 is respectfully requested.

Conclusion

The rejected claims have been shown to be allowable over the prior art. Applicant believes that this paper is fully responsive to each ground of rejection cited by the Examiner in the Office Action dated August 23, 2005, and respectfully requests that a timely Notice of Allowance be issued in this case.

Please apply any charges not covered or credits in connection with this filing to Deposit Account No. 03-3325 (ref. SP02-264A).

Respectfully submitted,

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